CONTRIBUTION TO THE FUNGUS FLORA OF NORTHEASTERN NORTH AMERICA. IV[1]

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The following continues a report of unusual or rare species of higher fungi that we have collected in New England during recent years. In the summer of 1963 our field work was done in the White Mountains of New Hampshire, and during the summer and fall of 1964 we collected in the Mt. Mansfield area of Vermont. Although both years were generally dry in New England, sufficient moisture did accumulate at these two areas to produce a number of interesting species.

The senior author is responsible for the information on agarics, while the junior author has provided the data on ascomycetes. The colors within quotation marks are from Ridgway, R., 1912. Color Standards and Color Nomenclature. Washington, D. C. The collections are deposited in the Herbarium of the University of Massachusetts, Amherst, unless otherwise noted.

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[1]I. Rhodora **62:** 186-198. 1960. II. Rhodora **64:** 126-137. 1962. III. Rhodora **65:** 289-309. 1963. Contribution from the Department of Botany, University of Massachusetts, Amherst.

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Plate 1331 *Callistosporium luteoolivaceum* (Berk. & Curt.) Singer. × 1.

BASIDIOMYCETES

Callistosporium luteoolivaceum (Berk. & Curt.) Singer, Lloydia **9:** 117. 1946. Plate 1331.

Agaricus luteoolivaceus Berk. & Curt. Ann. Mag. Nat. Hist. III, **4:** 286. 1859.

Agaricus coloreus Peck, Buffalo Soc. Nat. Sci. Bull. **1:** 46. 1873.

Agaricus rubescentifolius Peck, N. Y. State Mus. Rep. **39:** 38. 1886.

Collybia luteoolivacea (Berk. & Curt.) Sacc. Syll. Fung. **5:** 215. 1887.

Collybia colorea (Peck) Sacc. Syll. Fung. **5:** 230. 1887.

Collybia rubescentifolia Peck, N. Y. State Mus. Rep. **41:** 83. 1888.

Tricholoma rubescentifolium (Peck) Sacc. Syll. Fung. **9:** 15. 1891.

Collybia colorea var. *rubescentifolia* (Peck) Peck, N. Y. State Mus. Rep. **49:** 51. 1896.

Callistosporium psilocybe Murr. & Singer, Mycologia **36:** 363. 1944.

Pileus 1-4 cm. broad, convex at first with an inrolled and slightly incurved margin, expanding to broadly convex, finally plane, margin slightly inrolled for some time, exceeding gills at times, sometimes sulcate but not pellucid-striate, surface glabrous when moist, matted

fibrillose or innately radiate-fibrillose when faded, dull yellow at first becoming cinnamon to rufous brown ("orange cinnamon", "Hays russet", "brick red", "Brussels brown", "cinnamon rufous"), hygrophanous, fading to yellowish or buff (near "antimony yellow", "deep colonial buff", "light ochraceous salmon", "light ochraceous buff"), disc darkest; flesh thin, rather brittle, watery yellowish fading to pale yellowish or whitish, no odor and taste or taste rarely bitter.

Lamellae adnate or adnexed, finally emarginate then seceding, close, broad (up to 7 mm.), not forked or intervenose, arched at times, yellow ("empire yellow", "yellow ochre", "antimony yellow", "chamois") not fading, edges crenate or merely uneven, at times marginate with reddish brown in age.

Stipe 2.5-5 cm. long 1.5-5 mm. thick at apex, equal or the base enlarged (up to 7 mm.), and tapering upward, solid at first (interior concolorous with pileus flesh), becoming hollow, at times eccentric, often curved, surface innately fibrillose-striate, concolorous with lamellae, darkening to dingy "ochraceous buff", "cinnamon", or "dresden brown", base with white tomentum and sometimes a few white rhizoids.

Spores 4.5-7 × 2.5-4 μ, elliptical, sometimes elliptic-oblong, smooth, not amyloid, often with vinaceous droplets or contents in KOH, white in mass; basidia 16-28 × 4.5-7 μ, 2- or 4-spored, often with vinaceous droplets or granules in KOH; pileus tissue: fresh material yellowish in water mount, revived material pale vinaceous in KOH, pigment in cell contents and often punctate-encrusted, surface at times with protruding cystidioid end cells, cuticular hyphae cylindrical, 2.5-5.5 μ in diameter, tramal hyphae cylindrical to slightly inflated, 2-8 μ in diameter, clamp connections absent; gill trama subparallel, broad, hyphae cylindrical to slightly inflated, 2.5-7.5(-9) μ in diameter.

Scattered to gregarious or occasionally cespitose. On conifer logs and stumps.

Material examined: *Bigelow 10788*, near Katahdin Stream Campground, Baxter State Park, **Maine**, August 6, 1962; *7309*, *7310*, *7311*, Amherst, **Massachusetts**, August 4, 1958; *7411*, Amherst, August 9, 1958; *7515*, Amherst, August 17, 1958; *7600*, Mt. Toby, Sunderland, August 27 1958; *7739*, Mt. Toby, September 15, 1958; *7802*, Mt. Toby, September 20, 1958; *8264*, Amherst, July 25, 1959; *8956*, Wahconah Falls, Dalton, July 26, 1960; *9007*, D.A.R. State Forest, Goshen, August 2, 1960; *9234*, D.A.R. State Forest, September 1, 1960; *9624*, Pittsfield State Forest, Pittsfield, July 26, 1961; *9683*, New Salem, August 2, 1961; *11990*, near Sawyer Rock, White Mts. Nat. Forest, **New Hampshire**, July 27, 1963; *12246*, Oliverian Brook Trail, White Mts. Nat. Forest, August 13, 1963; *C. H. Peck*, North Greenbush, **New York** (type of *Agaricus rubescentifolius*, NYS), August; *C. H. Peck*, Croghan (type of *Agaricus coloreus pro parte*, NYS).

This agaric can be very confusing in the field as the

colors of the pileus and stipe vary markedly according to the age of the carpophore or its moisture content. In my field work the brown stage of the pileus seemed to be encountered much more frequently than the yellow stage.

I have not had the opportunity to study other species in this genus, but the carpophores of *C. luteoolivaceum* at least turn a rather bright vinaceous red when dilute KOH solution is applied to fresh material. In drying, specimens become a dark vinaceous color over all.

Clitocybe albimontana Bigelow, *nomen novum*

Omphalina oreades Singer, Pap. Mich. Acad. Sci., Arts & Letters **32:** 123. 1946.

Pileus (2.5-)4-10 mm. broad, convex with an incurved margin at first, expanding to broadly convex, disc rarely slightly depressed, glabrous and striate moist, disc brown, striations dark brown ("bister"), paler in between striations (near "snuff brown"), hygrophanous, fading to sordid alutaceous, fibrillose and opaque faded, fibrils often erect near margin; flesh thin, pliant, concolorous with pileus moist or faded, no odor, taste mild.

Lamellae decurrent, usually evenly and forming a collar on the stipe apex, narrow to moderately broad (± 1 mm.), distant, rarely forked, not intervenose, arched, color a pale "buffy brown", edges even.

Stipe 6-9 mm. long, 0.5-1.5 mm. thick, equal or tapering downward from a slightly enlarged apex, pruinose at first becoming glabrous, solid, rather soft, darker brown than lamellae ("buffy brown", "Saccardo's umber").

Spores 7.5-10 × 3-4 μ, shape variable: elliptical to obovate or subcylindrical in face view, sublacrymoid or lacrymoid in side view, sometimes slightly bent at either end, smooth, not amyloid; basidia 24-31 × 5.5-7 μ, 4-spored, sterigmata up to 7 μ long, basidioles somewhat irregular in shape at times; cystidia not differentiated; pileus tissue: cuticle brown in KOH, pigment finely but distinctly encrusted, hyphae cylindrical or inflated, 3-8.5 μ in diameter, trama pale brown, hyphae smooth or encrusted, cylindrical or inflated, 3-11 μ in diameter, clamp connections absent; gill trama interwoven, pale brown, hyphae smooth or encrusted, cylindrical or inflated, 1.5-7(-11) μ in diameter.

Scattered or gregarious. On moss or sandy soil in alpine zone.

Material examined: *Bigelow 11918, 11919*, Lake-of-the-Clouds Trail from peak, Mt. Washington, **New Hampshire**, July 23, 1963; *12339, 12340*, trail to Alpine Garden from peak, Mt. Washington, August 19, 1963; *R. Singer*, Mt. Washington (type of *Omphalina oreades*, F).

Plate 1332 *Hygrophorus lilacinus* (Laest.) M. Lange. × 1.

The preceding records are apparently the first of this species since Singer found it twenty years ago in the same locality. *C. albimontana* is easily overlooked because of its small size and a tendency to grow under overhanging moss where water or paths have cut down into the soil. A number of carpophores were found on both east and west sides of the mountain below the peak.

In transferring *Omphalina oreades* to *Clitocybe*, a new species epithet is necessary because of *Clitocybe oreades* Murrill.

Clitocybe asterospora (Lange) Moser apud Gams, Kleine Kryptogamen Flora II, p. 52. 1953.

Gregarious. On wet moss, in depression between rocks.

Material examined: *Bigelow 14223*, top of Mt. Mansfield, **Vermont,** September 24, 1964.

This agaric appears to be rare in North America. I know of fruitings only in Michigan and Ontario besides the specimens found on Mt. Mansfield.

Hygrophorus lilacinus (Laest.) M. Lange, Meddelelser om Grønland 148(2): 63. 1957. Plate 1332.

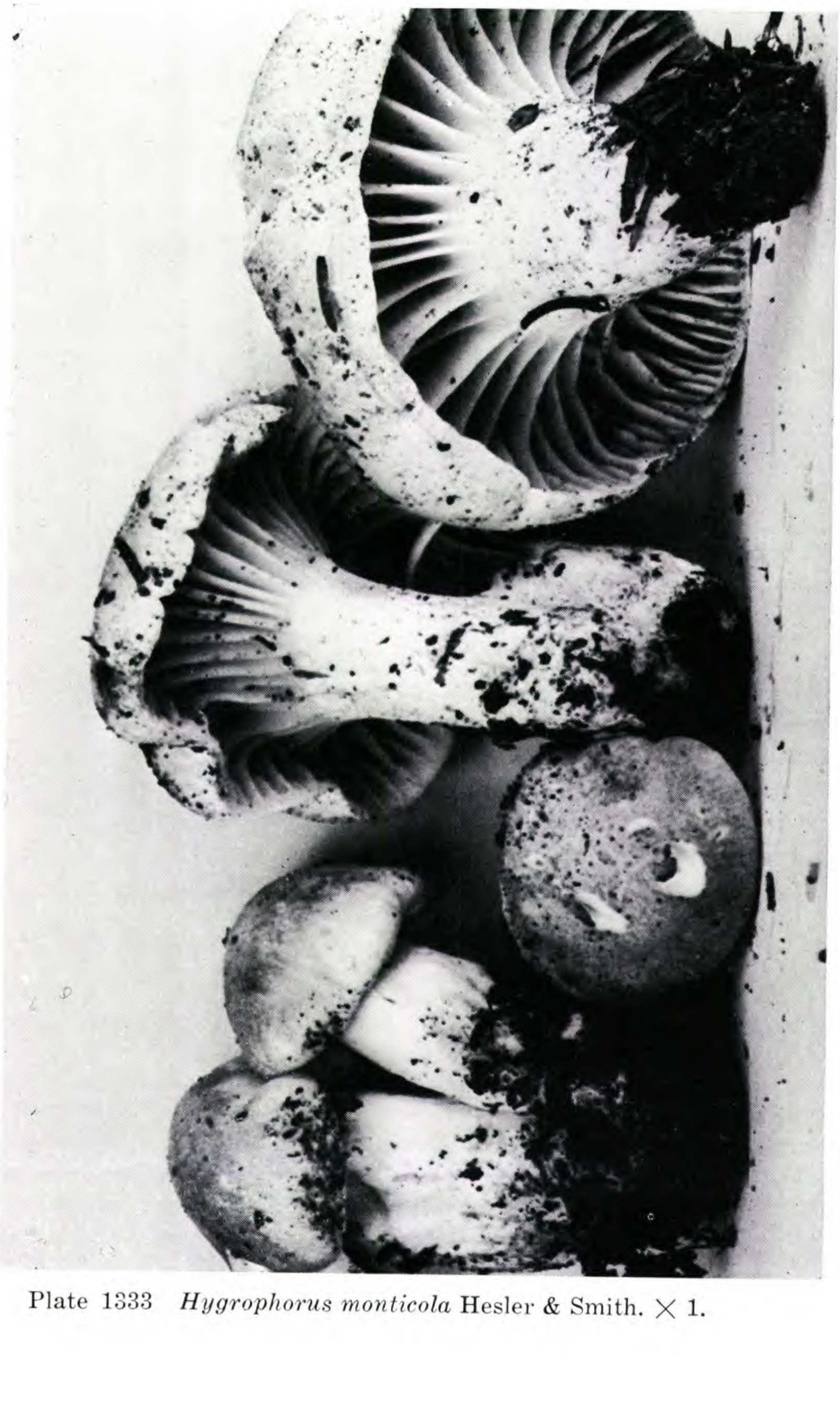


Plate 1333 *Hygrophorus monticola* Hesler & Smith. × 1.

Agaricus (Omphalia) lilacinus Laestadius, Lapp. Torn. p. 45, n. 156. 1860.

Hygrophorus violeïpes M. Lange, Meddelelser om Grønland 147(11): 18. 1955.

Material examined: *Bigelow 13656*, Mt. Mansfield, **Vermont,** August 29, 1964.

A small group of carpophores was found in a mossy depression near the "upper lip" on top of Mt. Mansfield. The bright luteous colors of cap and gills and the violet stipe make this species easy to recognize in the field. In microscopic characters as well as all field characters, my specimens agree exactly with Lange's (1955) description of *H. violeïipes.* Apparently Bigelow 13656 is the first record of *H. lilacinus* in North America.

In 1957, Lange placed *Omphalia luteolilacina* Favre in synonymy with *H. lilacinus.* While there is certainly a resemblance between the two species, I do not agree with Lange's treatment. As described by Favre (1955), *O. luteolilacina* lacks clamp connections, has elliptic-cylindric spores and a hispid stipe. These characters are unlike *H. lilacinus* and certainly sufficient to maintain *O. luteolilacina* as a separate taxon.

Hygrophorus monticola Hesler & Smith, North American Species of *Hygrophorus*, p. 359. 1963. Plate 1333.

Pileus 1.5-16 cm. broad, at first convex with an incurved and inrolled margin, not striate, slowly expanding to plane with a decurved margin, elevated in age, surface dry and unpolished, finely matted-fibrillose on disc under a lens, glabrous at the margin, cracked at times in age or dry weather, color dingy "cinnamon" to "vinaceous cinnamon" or "sayal brown", margin whitish at times, "russet vinaceous" over all when dry; flesh thick on disc, tapering abruptly to margin, whitish (near "cartridge buff"), firm, brittle, odor strong, sweet like that of cherries, taste mild.

Lamellae decurrent (evenly at times and forming a collar on the stipe apex), distant, thickened, broad (3-11 mm.), occasionally forked, sides venose at times, arched, color "cream buff" to "ochraceous buff", edges even.

Stipe 2-12 cm. long, apex 0.8-4.2 cm. thick, equal in smaller carpophores but tapering downward strongly in larger ones, solid (white

within), no veil, surface dry and unpolished, velvety to pubescent under a lens, appressed in age, whitish.

Spores 9-11.5(-13) × 6-7.5 μ, elliptical, smooth, not amyloid; basidia 46-68 × 5.5-8 μ, 4-spored; cystidia not differentiated; pileus tissue: cuticle pale yellowish in KOH, pigment dilute in the contents of some surface hyphae, cuticle an ixocutis, hyphae cylindrical, 2.5-4 μ in diameter, walls thin, tramal hyphae mostly cylindrical, 3-9(-14) μ in diameter, walls often slightly thickened, clamp connections present; gill trama: divergent in young carpophores but appearing more interwoven in large caps, hyphae cylindrical, 4-7.5 μ in diameter.

Gregarious to cespitose. In soil and needle beds under spruce.

Material examined: *Bigelow 13917, 13984, 14124, 14204, 14278, 14323, 14350, 14373*, Lamoille and Washington counties, **Vermont,** September and October.

In Hesler and Smith's (1963) monograph of *Hygrophorus, H. monticola* is described from specimens collected in Idaho and eastern Canada. The pilei measured 2-5 cm. broad, and the stipes 3-6 cm. × 3-25 mm. In view of these dimensions, the Vermont specimens are most impressive in size. The odor of cherries was very pronounced as well and could be detected without crushing the flesh, sometimes from several feet away. Of further note, and perhaps worthy of emphasis in diagnosis, was the tendency of the pileus to become more intense in color with drying.

Hygrophorus nitiosus Blytt, Norges Hymenomycetes. Videnskab Selskabets Skrifter. Math. Naturv. Kl. 1904, No. 6. 1905.

Gregarious. On soil of dirt road in hardwoods.

Material examined: *Bigelow 13132*, Stowe, Lamoille Co., **Vermont,** July 28, 1964.

Hygrophorus tahquamenonensis Smith & Hesler, Sydowia 8: 331. 1954.

Gregarious to subcespitose, on moss by stream, near hardwoods.

Material examined: *Bigelow 13242*, Bingham Falls, near Stowe, Lamoille Co., **Vermont,** August 3, 1964.

Mycena atkinsoniana A. H. Smith, North American Species of *Mycena*, p. 144. 1947.

On leaves and humus under beech.

Material examined: *Bigelow 13936*, Bingham Falls, near Stowe, Lamoille Co., **Vermont,** September 9, 1964; *14059*, near Lake Mansfield, Lamoille Co., September 14, 1964.

Paxillus curtisii Berkeley, Ann. Mag. Nat. Hist. II, **12**: 423. 1853.

On hemlock logs.

Material examined: *Bigelow 11906*, South Conway, Carroll Co., **New Hampshire**, July 22, 1963; *12093*, same locality, August 3, 1963; *12398*, *12399*, same locality, September 4, 1963.

Phaeocollybia kauffmanii (Smith) Singer, Rev. Mycol. **5**: 11. 1940.

Naucoria kauffmanii Smith, Mycologia 29: 52. 1937.

Pileus 1.3-5.5 cm. broad, obtuse-conic or convex at first with margin slightly incurved and narrowly inrolled, not striate, expanding somewhat to broadly convex with margin remaining incurved and inrolled, sometimes lobed, surface glutinous or viscid, smooth, glabrous, color watery "cinnamon" to "sayal brown", fading to "cinnamon buff", at times with a few dark reddish flecks; flesh thick, firm, whitish, odor and taste farinaceous.

Lamellae emarginate (notch small and abrupt, superficially appearing "free"), close, narrow to medium broad (2-7 mm.), forked at times, white at first then "vinaceous buff" or "pale pinkish buff", edges slightly uneven.

Stipe 4-13 cm. long, apex 5-11 mm. thick, often subventricose (up to 16 mm. thick), attenuated and radicating (about half of stipe above soil), at times twisted, usually curved below, surface innately fibrillose, moist but not viscid, solid (cortex thick and brown in section, interior firm, whitish to "pale ochraceous buff"), color watery "cinnamon buff" above, rufous stained below, especially on lower portion embedded in soil.

Spores 7.5-9 × 5.5-6 μ, ovate in face view, inequilateral in side view, with a minute apical pore but no conspicuous beak, rugulose-roughened, fulvous in KOH; basidia 23-31 × 7.5-10 μ, 4-spored, protruding beyond the hymenium at maturity; cystidia: cheilocystidia abundant, pleurocystidia rare, both basidioid to clavate in shape, sometimes rather irregular and with broad lump near apex, rarely 2-celled, often with dilute brownish contents, smooth, thin-walled; pileus tissue: surface layer a distinct gelatinous pellicle in KOH, hyaline, hyphae 1.5-2.5 μ in diameter, trama brown in KOH, pigment finely but distinctly encrusted on some hyphae in subpellicular zone, in smooth and thickened walls below, hyphae cylindrical to somewhat inflated, 4-13 μ in diameter, clamp connections absent; gill trama parallel, brownish in KOH, pigment in thickened but smooth walls, hyphae cylindrical, 3-8 μ in diameter.

Scattered or subcespitose. On soil of river bank near hemlock.

Material examined: *Bigelow 13570*, Bingham Falls, near Stowe, **Vermont**, August 20, 1964.

P. kauffmanii is well known in the Pacific northwest

although apparently not common. Hesler (1949) has reported its occurrence in Tennessee, but I have not found any other record from the east. My specimens from Vermont fit Smith's (1957a) description except in dimensions of the carpophore. Western specimens of *P. kauffmanii* are considerably larger in size.

Pleurotus elongatipes Peck, Jour. Myc. 14: 1. 1908.

Pileus 2.5-14 cm. broad, convex to broadly convex or nearly plane, margin narrowly inrolled and incurved for some time, slightly pubescent when young, sometimes with short sulcations, surface glabrous, mottled about the disc with small watery-appearing spots, white to pale avellaneous or pale buff ("cartridge buff", "light buff"); flesh usually rather thick on disc, firm, brittle, odor often spicy and fragrant when flesh crushed, taste not distinctive.

Lamellae at first adnexed or adnate, becoming sinuate or emarginate, seceding at times, moderately broad (5-11 mm.) near stipe but narrowed at margin of pileus, usually close but sometimes crowded, not forked or intervenose, white or whitish, edges uneven and brittle in age.

Stipe 3-10 cm. long, apex 4-20 mm. thick, base usually somewhat enlarged and tapering upward, sometimes ventricose, solid (interior white and soft), cavernous in age, often curved, eccentric at times, surface with a thin fibrillose coating, becoming innately fibrillose-striate, apex pruinose to pubescent at times, white or nearly so.

Spores 4-5.5 × 4-4.5 μ, globose to subglobose, smooth, not amyloid, white to slightly cream tinged in deposit; basidia 16-24 × 4-6 μ, 4-spored, carminophilous granules absent; cystidia not differentiated; pileus tissue: surface subgelatinous to gelatinous in KOH, cuticular hyphae cylindrical, 1.5-3 μ in diameter, tramal hyphae cylindrical to slightly inflated, 2.5-13 μ in diameter, clamp connections present, walls thin or slightly thickened and refractive; gill trama regular to subparallel, broad, hyphae mostly cylindrical, (1.5-)4-9(-11) μ in diameter, wall thin or slightly thickened and refractive.

Solitary or cespitose. On hardwood logs and stumps, sometimes in wounds of living maple.

Material examined: *Bigelow 8665*, North Pond, Savoy Mt. State Forest, Florida, **Massachusetts**, September 22, 1959; *9362*, Beartown State Forest, Monterey, September 27, 1960; *10809*, Katahdin Stream Campground, Baxter State Park, **Maine**, August 6, 1962; *11146*, near Norcross, Penobscot Co., August 18, 1962; *11259*, Cedar Lake, Penobscot Co., August 24, 1962; *D. E. Fischer*, Detroit, **Michigan**, October 5, 1905 (type, NYS); *Bigelow 12524*, Oliverian Brook Trail, White Mts. Nat. Forest, **New Hampshire**, September 7, 1963; *13842*, near Johnson, Lamoille Co., **Vermont**, September 2, 1964; *13937*, Bingham

Falls, near Stowe, Lamoille Co., September 9, 1964; *14048*, Stowe, September 13, 1964; *14110*, Ranch Brook Trail, Mt. Mansfield State Forest, September 16, 1964; *14116*, Monroe State Park, Washington Co., September 17, 1964.

Pleurotus elongatipes has proven to be quite common in New England. I have found it growing on birch and poplar debris as well as on dead or living maple. A description based upon specimens from Mt. Rainer, Washington, has been published by A. H. Smith (1957b).

This species is a *Pleurotus* in the traditional sense of the genus, but the globose spores exclude it from modern interpretations. According to Singer's (1962) classification, the closest affinities may be with *Hypsizygus*, but some emendation of this genus would be necessary to admit *P. elongatipes*.

ASCOMYCETES

Keissleriella caudata (Müller) Corbaz, Phytopath. Zeitschr. **28:** 411. 1957. Figure 8.

Material examined: *Barr 2896*, on cultivated rose stems, Conway, **Massachusetts,** May 7, 1961.

K. caudata was described from *Triticum* stalks in Europe. The collection on rose stems agrees with the description of the species, although the ascospores are slightly longer, 15.5-17.5 × 3.5-4.5 μ rather than 10-13 × 4-4.5 μ. This species differs from *K. cladophila* (Niessl) Corbaz by smaller, thinner-walled ascostromata, lack of a clypeus, and narrower ascospores. *Keissleriella* is included in the Pleosporaceae.

Lasiosphaeria chrysentera Carroll & Munk, Mycologia **56:** 83. 1964.

Material examined: *Barr 3338*, Abol Field, near Baxter State Park, **Maine,** July 6, 1962.

The species, described from Costa Rica, is closely related to *L. ovina* (Pers. ex Fr.) Ces. & de Not. *L. chrysentera* differs in golden-yellow pigmentation of the hymenium, bright yellow globule at apex of ascus, and yellowish ascospores. One additional collection has been examined from

Idaho, A. W. Slipp, U.I.F.P. Herb. 3834, on decorticated *Alnus tenuifolia*, 1943. *Lasiosphaeria* is a member of the Sordariaceae.

Leiosphaerella falcata Barr, *sp. nov.*, figures 1-4.

Perithecia 180-300 μ diametro, 130-250 μ alta, immersa, gregaria, ostiola eccentrica vel lateralia, 60-120 μ diametro, 70-150 μ alta, periphysata; peridium 13-16.5 μ crassum, brunneum, hyphis brunneis vestita. Asci 55-100 × 11-14.5 μ, elliptica, unitunicata, ad apicem poro amyloideo, paraphysati. Ascosporae 46-86 × 3-5 μ, fusiformae vel falcatae, hyalinae, uniseptatae, fasciculatae in ascis.

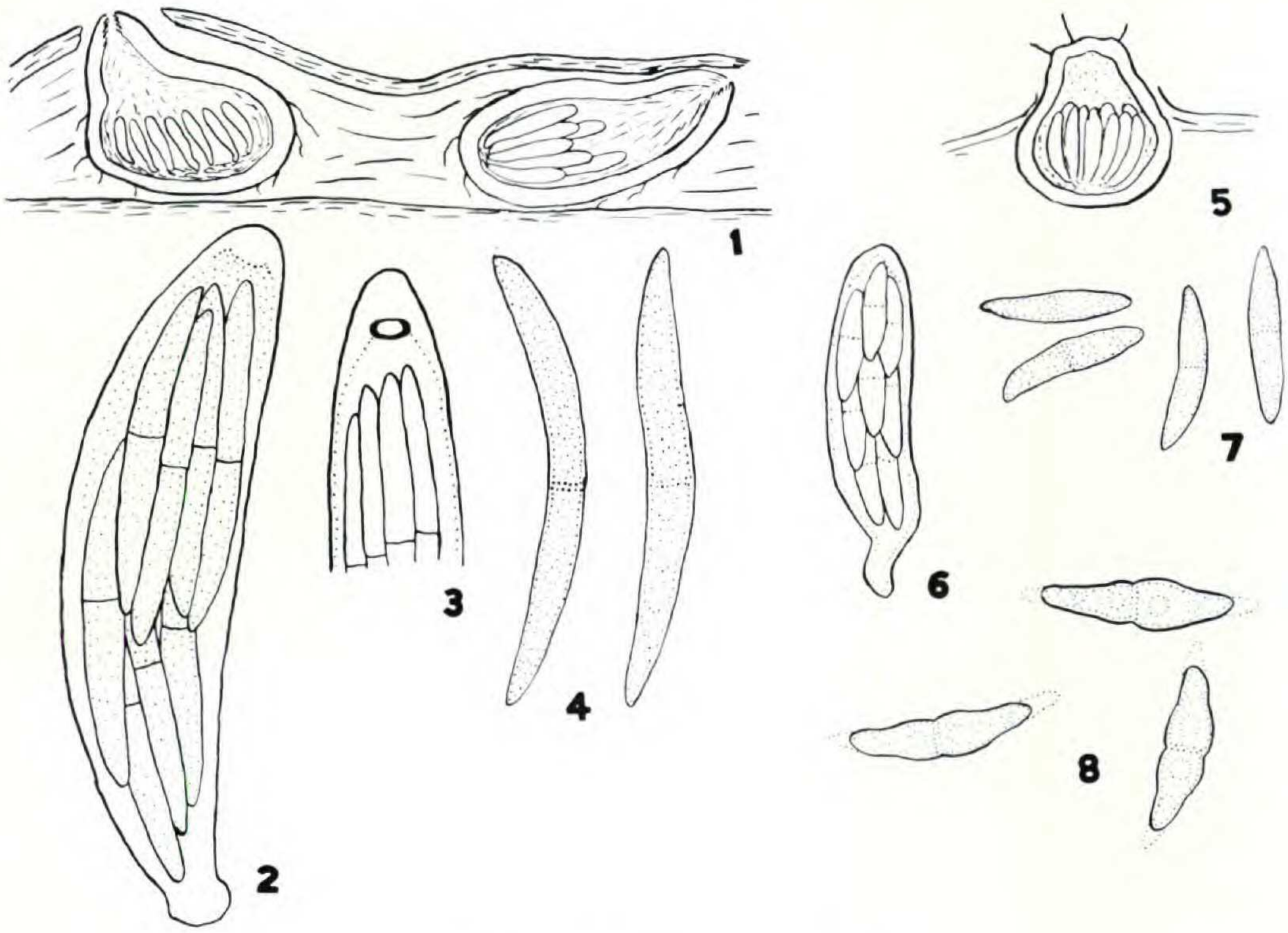
Specimen typicum in caulis *Aceris pensylvanicum* L., a **M.E. Barr** lectus, n. **3460**, prope "Katahdin Stream Campground, Baxter State Park, Maine, July 23, 1962", in herbario Univ. Mass. depositum.

Perithecia 180-300 μ in diameter, 130-250 μ high, depressed globose, immersed beneath epidermis and raising it slightly, thickly scattered, ostiole eccentric to lateral, 60-120 μ in diameter, 70-150 μ high, piercing the covering layer of substrate, canal periphysate, perithecial wall 13-16.5 μ wide, of polygonal, brown, compressed layers of cells, inner layers hyaline, with brown hyphae surrounding perithecium and penetrating substrate tissues. Asci 55-100 × 11-14.5 μ, elliptical, apex rounded or truncate, narrowed abruptly below spores into rounded base, wall single, thickened above with refractive pore, amyloid in Melzer's, paraphyses deliquescent and forming an amorphous mass around asci. Ascospores 46-86 × 3-5 μ, greenish hyaline, fusiform to falcate, tapered to pointed ends, 1-septate in or near the middle, not constricted at the septum, wall thin, smooth, contents homogeneous or globular, in two overlapping fascicles in the ascus.

In small dead branches of *Acer pensylvanicum* and *A. spicatum*.

Material examined: *Barr 3267*, Norcross, Penobscot Co., **Maine**, June 30, 1962; *3460* (*type*), Katahdin Stream Campground, Baxter State Park, July 23, 1962; *3644*, Norcross, August 18, 1962; *3995A*, Stony Brook Trail, near Gorham, **New Hampshire**, July 26, 1963; *2098*, Lake Munroe, Mt. Tremblant Park, **Quebec**, July 24, 1957; *4179*, Underhill Camp Area, Mt. Mansfield State Forest, **Vermont**, June 30, 1964; *4334*, Mt. Elmore State Park, July 16, 1964.

L. falcata is closely related to *L. praeclara* (Rehm) von Höhnel, the type of the genus, and *L. phoenicis* (Chona & Munjal) Müller & Ahmad in spore shape. The other members of the genus have shorter, relatively broad spores. The eccentric to lateral position of the beak of *L. falcata* and the longer spores distinguish it from the other species. This fungus shows affinities to members of *Ceriospora* but differs by lacking spore appendages and by simpler apical appara-



Legend for Figures 1-8

Figs. 1-4. *Leiosphaerella falcata Barr, sp. nov.:* 1, perithecia beneath bark, 2, ascus, 3, ascus showing amyloid apical ring, 4, ascospores. Figs. 5-7. *Mycosphaerella linnaeae* Barr, *sp. nov.:* 5, ascostroma, 6, ascus, 7, ascospores. Fig. 8. *Keissleriella caudata* (Müller) Corbaz: ascospores. Figs. 1, 5, × 80; figs. 2-4, 6-8, × 750.

tus of the ascus. In the classification of Müller & von Arx (1962), *Leiosphaerella* is considered to be a member of the Amphisphaeriaceae.

Mycosphaerella linnaeae Barr, *sp. nov.*, figures 5-7.

Ascostromata 80-100 μ diametro, 72-100 μ alta, immersa, gregaria, epiphylla; peridium 11-14.5 μ crassum, brunneum, hyphis brunneis. Asci 36-45 × 7.5-9 μ, oblonga, bitunicata, aparaphysata. Ascosporae 16.5-21 × 2-3 μ, fusiformae, hyalinae, uniseptatae, in duobus fasciculatae in ascis.

Specimen typicum in folia *Linnaeae borealis* L. var. *americanae* (Forbes) Rehd., a **M.E. Barr** lectus, n. **3831,** prope "Millbrook Trail, Jefferson, White Mts. Nat. Forest, New Hampshire, July 6, 1963", in herbario Univ. Mass. depositum.

Ascostromata 80-100 μ in diameter, 72-110 μ high, globose, slightly depressed or conical, immersed in leaf tissue, with broad blunt apex

erumpent through upper epidermis, scattered thickly and evenly over most of leaf, wall thin, 11-14.5 μ wide, two to three layers of dark brown, polygonal cells, compressed hyaline cell layers toward interior, brown hyphae copious in leaf tissues. Asci 36-45 $\times$ 7.5-9 μ, oblong, apex rounded, base foot-like, wall double, thickened above, numerous in a fascicle, aparaphysate. Ascospores 16.5-21 $\times$ 2-3 μ, greenish hyaline, fusiform, ends pointed, straight to curved, one-septate in middle, not constricted at septum, wall thin and smooth, contents guttulate or with two globules in each cell, overlapping in two fascicles in the ascus.

On overwintered leaves of *Linnaea borealis* var. *americana*.

Material examined: *Barr 3831* (*type*), Millbrook Trail, Jefferson, White Mts. Nat. Forest, **New Hampshire**, July 6, 1963; *1906*, woods near chalet, Mt. Albert, Gaspe Prov. Park, **Quebec**, July 6, 1957.

A species of *Cercospora* is intimately associated with *M. linnaeae*, and I suggest that it may form part of the life cycle of this species. This *Cercospora* has conidiophores short, brown, septate, erumpent through upper leaf epidermis, often arising from apex of young ascostromata; conidia 24-54 $\times$ 2 μ, greenish hyaline, cylindrical, ends rounded, several-septate, contents guttulate. I have found no records of *Cercospora* on *Linnaea* (Chupp, 1953).

At least twenty-four species of *Mycosphaerella* have been described on members of the Caprifoliaceae, but only two were reported on *Linnaea*. *M. minor* (Karst.) Johans. has smaller ascostromata, broadly saccate asci and clavate ascospores 11-12 $\times$ 4 μ. No measurements have been given for *Sphaerella leightonii* (Berk. & Br.) Cooke, but ascospore shape and septation is quite different from that of *M. linnaeae*. As described in the literature, the other species of *Mycosphaerella* on members of the Caprifoliaceae do not appear similar to Barr 3831 and 1906. *M. crepidophora* (Mont.) Rehm and *M. ebulina* Petrak have elongate ascospores and seem most closely related to *M. linnaeae*. *M. crepidophora* develops in spots in living leaves of *Viburnum;* the ascospores are cylindrical or oblong and are somewhat broader than those of *M. linnaeae*. *M. ebulina* occurs on dead leaves of *Sambucus*. The ascostromata are densely gregarious to form angular black spots, asci are larger, and ascospores broader than in *M. linnaeae*. The broad apex of

the ascostromata and elongate, narrow fusoid ascospores are distinguishing characters of *M. linnaeae*.

Plagiostigme petrakii Müller, Sydowia **18**: 90. 1965.

Plagiophiale petrakii (Müller) Petrak, Sydowia **18**: 387, 1965.

Material examined: *Barr 4094*, on overwintered leaves of *Polygonum viviparum*, Alpine Gardens, Mt. Washington, **New Hampshire**, August 19, 1963.

This rare and distinctive fungus has been illustrated and described recently by Müller (1965), who made several collections of it on *Polygonum viviparum* from the Swiss and Italian Alps. Petrak (1955) was first to collect *P. petrakii*, but thought it to be identical with *Sphaerella eucarpa* Karst. At that time he erected the genus *Plagiophiale* for the species. However, *Sphaerella eucarpa* Karst. is a species of *Wettsteinina* (Barr 1959, Müller and von Arx 1962), and therefore *Plagiophiale* Petrak is a nomenclatural synonym of *Wettsteinina*. Müller (1965) has discussed in detail the generic position of the species on *Polygonum*. The North American material appears to be identical in all respects with that described from Europe.

Plectosphaera salicis (Fckl.) v. Arx & Müller, Beitr. Kryptogamenfl. Schweiz **11**(1): 204. 1954.

Material examined: *Barr 3928*, *Salix* twigs, South Conway, **New Hampshire**, July 18, 1963.

This appears to be the first record of *P. salicis* in North America. According to the literature, this pyrenomycete has been found previously only in Europe. My collection agrees with the description and figure in von Arx and Müller (1954).

Podosphaera clandestina (Wallr. ex Fr.) Lév. Ann. Sci. Nat. Bot. III, 15: 36. 1851, var. **clandestina**

Material examined: *Barr 4578*, *Vaccinium angustifolium*, top of Mt. Mansfield, **Vermont**, August 28, 1964; *4583*, *V. uliginosum*, data as above; *4585*, *Ledum groenlandicum*, data as above.

This minute powdery mildew has been recorded only rarely on members of the Ericaceae, chiefly species of *Vaccinium*, and never, as far as I could determine, on *Ledum*.

The specimens are in close accord with the description of *P. oxyacanthae* var. *oxyacanthae* in Salmon (1900).

Thaxteria fusca (Fckl.) Booth, The Naturalist, London, p. 90. 1958.

Sphaeria phaeostromoides Peck, N. Y. State Mus. Rep. 28: 77. 1876.

Chaetosphaeria phaeostromoides (Peck) Sacc. Syll. Fung. **2:** 93. 1883.

Chaetosphaeria phaeostroma var. *phaeostromoides* (Peck) Ell. & Everh. North Amer. Pyreno., p. 160. 1892.

Material examined: *Barr 4041*, on fallen beech, near Sawyer Rock Picnic Area, White Mts. Nat. Forest, **New Hampshire,** August 10, 1963; *C. H. Peck*, on decorticated *Acer*, North Greenbush, **New York,** September 1874 (type of *Sphaeria phaeostromoides* Peck, NYS).

The collections cited above agree with Booth's (1958) description and figures of *T. fusca*, and bear both conidial and perithecial stages. Ellis and Everhart (1892) cited a collection from Missouri, but otherwise the fungus appears to be collected rarely. The genus *Thaxteria* is a member of the Coronophoraceae.

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